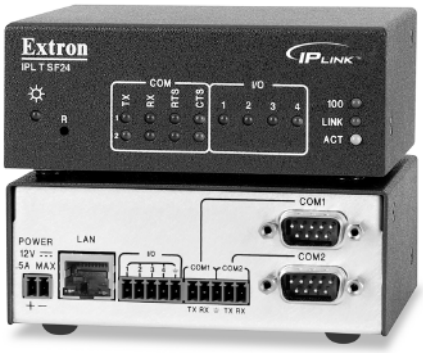
IPL T SF24 & IPL T SFI244

ETHERNET CONTROL INTERFACES

- Two serial ports
- Four Flex I/O ports
- Four IR ports (IPL T SFI244)
- IR learning capabilities (IPL T SFI244)
- Integrated Web server with 1.25 MB of flash memory
- Multi-user support
- Multiple levels of security
- Free IP Link™ Global Viewer™ Web-based asset management software
- IEEE 802.3af Power over Ethernet (PoE) compliant



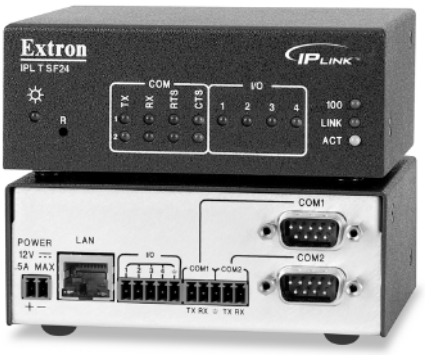
IPL T SF24

IPL T SFI244

The Extron IPL T SF24 and IPL T SFI244 are compact Ethernet control interfaces with integral high performance Web servers, enabling many A/V devices to be monitored, maintained, and managed over an existing high speed Local Area Network (LAN), Wide Area Network (WAN), or the Internet.

DESCRIPTION

The Extron IPL T SF24 and IPL T SFI244 are part of the IP Link™ family of ethernet control interfaces which are designed to integrate Internet Protocol (IP) connectivity into A/V systems. Projectors, plasma displays, switchers, A/V sources, lights, drapes, and many other devices can now be added to an existing computer network, enabling asset management and remote monitoring.



IPL T SF24

The Extron IPL T SF24 is a compact Ethernet control interface with integral Web server, two serial ports, and four Flex I/O ports.

IPL T SFI244

The Extron IPL T SFI244 is a compact Ethernet control interface with integral Web server, two serial ports, four Flex I/O ports, four IR ports, and an IR learner.

Model	Serial Ports	Flex I/O Ports	IR Ports
IPL T SF24	(2) RS-232/RS-422/RS-485	4	0
IPL T SFI244	(2) RS-232	4	4

Serial Ports

Both models provide two serial ports for control of two independent serial devices. The IPL T SF24 offers flexible connectivity via either 9-pin D-sub ports for RS-232, RS-422, or RS-485 devices or captive screw ports (RS-232 only). The IPL T SFI244 offers RS-232 connectivity (only) on captive screw ports. When configured for pass-through mode, the interfaces can pass through commands from an existing control system and also control and monitor attached devices.

Flex I/O Ports

The IPL T SF24 and IPL T SFI244 each have four Flex I/O ports. These flexible ports can be configured as analog in, digital in, or digital out. They support digital and analog signals from 0 to 24 volts, allowing a wide variety of devices to be controlled or monitored.

The 0 to 24 volt incoming analog signals are sampled with 12-bit precision. Voltage thresholds can be set. When a threshold is passed, the IPL T SF24 or IPL T SFI244 can be configured to send out a serial command, an e-mail, or trigger another event. As an example, a thermal sensor installed in an equipment rack can be connected to one of the Flex I/O ports. The IPL T SF24 or IPL T SFI244 can be configured to send an e-mail if the rack temperature exceeds a specific temperature.

When configured as digital inputs, the Flex I/O ports can connect to switches, motion sensors, moisture sensors, and tally feedback. This provides the ability to receive status from a variety of devices including projector lifts, motorized projection screens, room partition switches, and push buttons.

When configured as digital outputs, the Flex I/O ports can drive LEDs, incandescent lamps, or other devices. For applications that require contact closure control, the Flex I/O ports can interface with an Extron IPA T RLY4, an IP Link accessory featuring four isolated relays.

IR Ports

The IPL T SFI244 includes four fully programmable IR ports. Each IR port can output IR signals with or without the carrier signal using an optional wired IR emitter or IR broadcaster. IR control data can be collected and stored in two ways: IR data file download and IR learning. Extron maintains a large library of IR data files that can be downloaded from our Web site (www.extron.com) for storage in the IPL T SFI244. The IPL T SFI244 will power four IR emitters; each can be located up to 400 feet away.

IR Learning

The IPL T SFI244 has the ability to learn IR commands for virtually any IR controllable device. The Extron IR Learner software, on intuitive PC-based application for assisting with IR learning and managing IR data files, is available at no charge and can be downloaded from the Extron Web site.

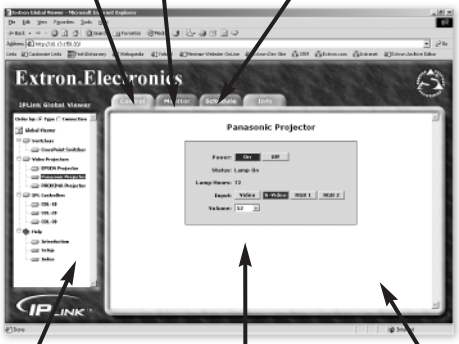
FEATURES

- **Bi-directional serial ports** – Both models provide two serial ports for control of two independent serial devices. When configured for pass-through mode, the interfaces can pass through commands from an existing control system and also control and monitor attached devices.
- **Four Flex I/O ports** – The Flex I/O ports can be configured as either inputs or outputs and can interface with devices such as relays, LEDs, and switches. The ports can also be configured to receive analog voltages for use with photo sensors, level feedback, and more.
- **IR learning capability** – The IPL T SFI244 can be configured to learn IR codes from a device's IR remote, enabling Web-based control of many popular A/V devices via the network.
- **Global compatibility** – All IP Link products use industry standard Ethernet communication protocols, including ARP, DHCP, ICMP (ping), TCP/IP, Telnet, HTTP, and SMTP.
- **Integral Web server** – Each IP Link interface features a built-in Web server with 1.25 MB of flash memory for storing the Global Viewer management application and any user customized web pages.
- **High performance architecture** – Web pages are served many times faster (6 Mbit/sec transfer rate) than similar products, so data is refreshed at a consistently high speed.
- **Multi-user support** – Each IP Link device supports multiple concurrent users, improving system throughput by sending information in parallel.
- **Multiple levels of security with password protection** – User access level authorizes limited entry to only pre-designated functions, while administrator access level permits full access to advanced settings.
- **Real-time clock** – Programmable operating alerts, sequencing, and automatic monitoring with the internal real-time clock and calendar allow IP Link interfaces to routinely check a connected device.
- **Power options** – For added reliability, users can power up the IPL T SF24 and IPL T SFI244 over existing Ethernet cabling (IEEE 802.3af), eliminating the need for a local power supply, or locally with the included external, international power supply.
- **Intuitive configuration utility** – The Global Viewer Configurator, a Windows® based program makes product setup simple and easy. Based on information provided by the user, the Global Viewer Configurator creates all of the files needed to build the Global Viewer Web-based asset management application and uploads them to the interface; no HTML programming knowledge is required.
- **Extensive library of downloadable device drivers** – Drivers for a wide variety of projectors, A/V devices and Extron products are available for download from the Extron Web site (www.extron.com).
- **Global Viewer Web-based asset management application** – The Extron Global Viewer software is the free Web-based asset management and control application designed specifically for IP Link network interfaces. The Global Viewer enables asset management functions including proactive maintenance, event scheduling, remote technical support, and theft alerts.

Control Screen
Remotely control basic functions such as power, volume, and inputs.

Monitor Screen
Remotely monitor power and projector lamp hours.

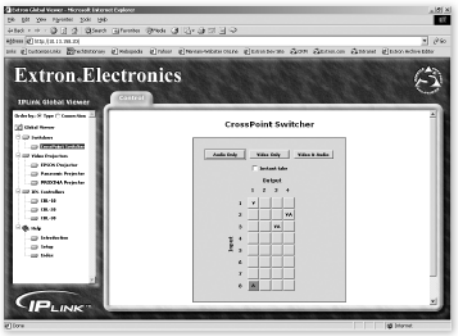
Schedule Screen
Conveniently schedule troubleshooting, automatic monitoring, or system power.



Centralize management of all A/V equipment in the building or all over the world.

Intuitive interface makes operations easier.

Web pages can be customized and tailored to meet customer needs and facilitate functionality.



Example of screen to control an Extron CrossPoint matrix switcher.

SERIAL CONTROL INTERFACE

Port number/type
- IPL T SF24 ..... 2 RS-232/RS-422/RS-485 configurable serial
- IPL T SFI244 ..... 2 RS-232 only

Connectors
- IPL T SF24 ..... (2) 9-pin male D and (1) 3.5 mm 5-pole captive screw connector
- IPL T SFI244 ..... (1) 3.5 mm 5-pole captive screw connector

Baud rate and protocol ..... 300 to 115200 baud
Default settings (adjustable): 9600, 8-bit, 1 stop bit, no parity

Pin configurations
- Serial, 9-pin D
  - RS-232 (default) ..... 2 = RX, 3 = TX, 5 = GND, 7 = RTS, 8 = CTS
  - RS-422 ..... 2 = RX-, 3 = TX-, 5 = GND, 7 = TX+, 8 = RX+
  - RS-485 ..... 2&3 = data- and tie 2&3, 5 = GND, 7&8 = data+ and tie 7&8
- Serial, 5-pole captive screw .... COM1: pin 1 = TX, 2 = RX, 3 = GND
  COM2: pin 4 = TX, 5 = RX, 3 = GND

Program control ..... Extron's Simple Instruction Set™ – SIS™

Global Viewer requirements ..... Microsoft® Internet Explorer ver. 6 or higher or Netscape® Navigator ver. 7 or higher

ETHERNET CONTROL INTERFACE

Connectors ..... 1 RJ-45 male connector

Data rate ..... 10/100Base-T, half/full duplex with autodetect

Protocols ..... ARP, DHCP, ICMP (ping), TCP/IP, Telnet, HTTP, SMTP

Default settings ..... Link speed and duplex level = autodetected
IP address = 192.168.254.254,
subnet mask = 255.255.0.0,
default gateway = 0.0.0.0
DHCP = off

FLEX I/O CONTROL INTERFACE

Number/type ..... 4 analog or digital (configurable)

Connectors ..... (1) 3.5 mm captive screw connector, 5-pole captive screw connector

Digital inputs
- Input voltage range ..... 0-24VDC, clamped at +30VDC
- Input impedance ..... 28 kohms
- Programmable pullup ..... 2 kohms to +5VDC
- Threshold low to high ..... Programmable range: 100 mV to 24VDC, default = 2VDC
- Threshold high to low ..... Programmable range: 100 mV to 24VDC, default = 1VDC

Digital outputs ..... 250 mA sink from 24VDC max.

Analog inputs ..... 12 bit A/D, 0 to 24VDC

Pin configurations ..... 1, 2, 3, 4 = digital I/Os 1, 2, 3, 4; 5 = GND

IR/SERIAL (IR/S) CONTROL INTERFACE — IPL T SFI244 ONLY

Output number 4

Connectors ..... (1) 3.5 mm 8-pole captive screw connector

IR output carrier frequency ..... 30 kHz to 1 MHz

Pin configurations ..... pins 1, 3, 5, 7 = S1, S2, S3, S4
pins 2, 4, 6, 8 = GND

GENERAL

Power ..... 100VAC to 240VAC, 50/60 Hz, 10 watts, external, autoswitchable; to 12VDC, 1 A power supply. Product requires 0.5 A.

Temperature/humidity ..... Storage -40° to +158°F (-40° to +70°C) / 10% to 90%, non-condensing Operating +32° to +122°F (0° to +50°C) / 10% to 90%, non-condensing

Rack mount ..... Yes, with optional 1U rack shelf, part #60-190-01, or the VersaTools® rack shelf, part #60-190-20; also under-furniture mountable with optional brackets #70-212-01or projector mountable with optional brackets #70-217-01

Enclosure type ..... Metal

Enclosure dimensions ..... 1.7" H x 4.3" W x 3.0" D (1U high, quarter rack width) 4.3 cm H x 10.9 cm W x 7.6 cm D (Depth excludes connectors.)

Product weight ..... 0.7 lbs (0.3 kg)

Shipping weight ..... 2 lbs (1 kg)

Vibration ..... ISTA/NSTA 1A in carton (International Safe Transit Association)

Listings ..... UL, CUL

Compliances ..... CE, FCC Class A, VCCI, AS/NZS, ICES

MTBF ..... 30,000 hours

Warranty ..... 3 years parts and labor

Model	Part Numbers
IPL T SF24	60-544-02
IPL T SFI244	60-544-06

Optional Accessories

1U 19" VersaTools rack shelf kit ..	60-190-20
1U 19" rack shelf kit	60-190-01
Under desk mount	70-212-01
Projector mount kit	70-217-01

Specifications are subject to change without notice.

IP Link™ Applications

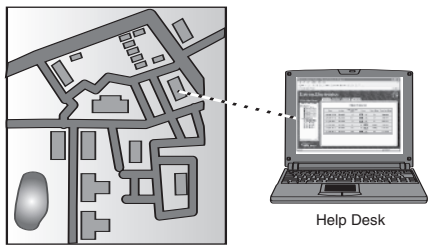
The role of the technical administrator in today's schools and businesses has expanded to include management and maintenance of A/V devices from multiple manufacturers, often spread out over great distances. IP Link makes it easier to integrate A/V systems into existing IP networks, providing Web-based monitoring and control that unifies A/V equipment under a single common graphical user interface.

The IPL T SF24 and IPL T SFI244 use Extron's exclusive IP Link™ technology, a high performance intelligent network solution specifically engineered to meet the needs of professional A/V environments, from large universities and businesses to small presentation environments.

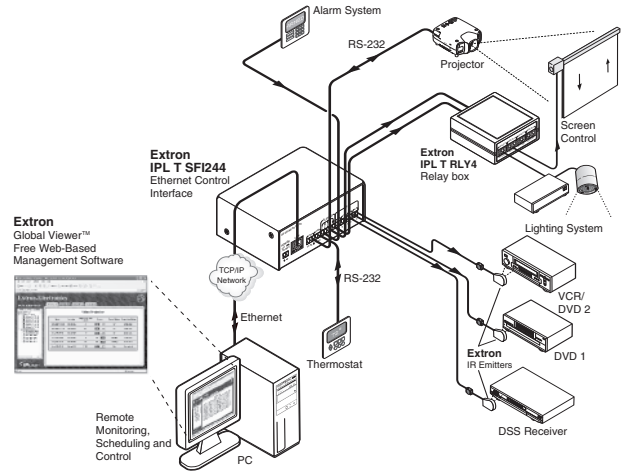
At its core, each IP Link Ethernet control interface is a complete, high performance, Web server with robust computing power. Each one contains a very fast processor with a latency, or delay, of less than one millisecond from the time it receives a command to the time it acts on that command. As a result, Web pages are served many times faster than similar products, so data is refreshed at a consistently high speed. The core technology and high performance architecture of IP Link interfaces makes them ideal for implementing A/V system management over the most widely available transport medium today, the corporate IP network.

Centralized Asset Management and Monitoring
Using IP Link hardware along with the Global Viewer Web-based asset management application, a technical administrator can track the activity and status of all connected A/V devices. Multiple rooms of equipment can be viewed simultaneously, by location or device type. IP Link makes up-to-the-minute data available like serial numbers, maintenance history, usage data, current status, and installed firmware, all viewable from any computer on the network. With IP Link's e-mail functionality, accessed via the Global Viewer, devices can be configured to proactively manage themselves. For instance, a projector can be polled routinely to track lamp usage and total life time. When lamp usage reaches a predetermined number of hours, the IP Link interface can send an e-mail, reminding technicians to replace the lamp.

Automated Scheduling
IP Link interfaces include a real-time clock, allowing an administrator to program operating alerts, schedule routine equipment activity, or run maintenance checks on lamp hours, environmental conditions, connectivity, and other issues vital to



Remote Device monitoring, scheduling and control using Global Viewer Web-based asset management application

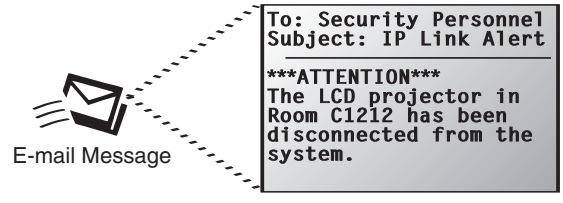


Presentation Room

operations. For instance, an administrator may want to configure projectors and other devices to power on or off at preset times. User-defined tasks are easy to configure and schedule with IP Link. Scheduling tasks and setting up e-mail reminders is simple and straightforward and doesn't require high-level programming skills.

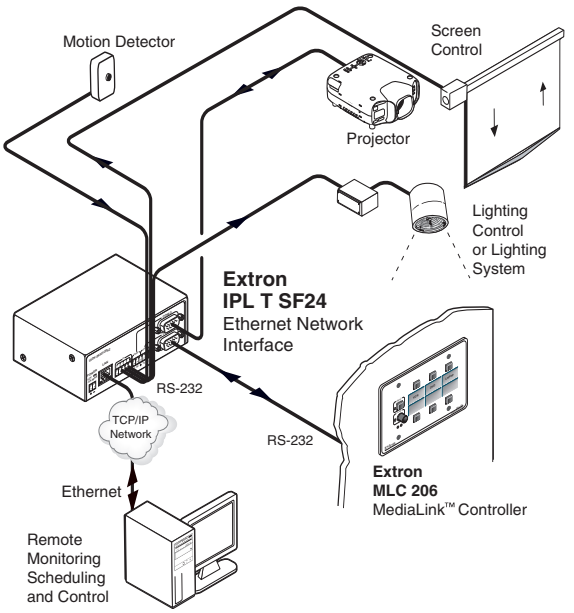
Remote Technical Support
One of the biggest challenges facing technical administrators today is meeting the ever-growing demands for technical support with limited support staff. IP Link extends the support staff's reach, giving technicians the power to troubleshoot and solve many typical problems remotely. With access to real-time A/V device status, such as power on or off, and current input selection, technicians can often restore system operation in minutes. The result is time saved and a reduced level of frustration for users.

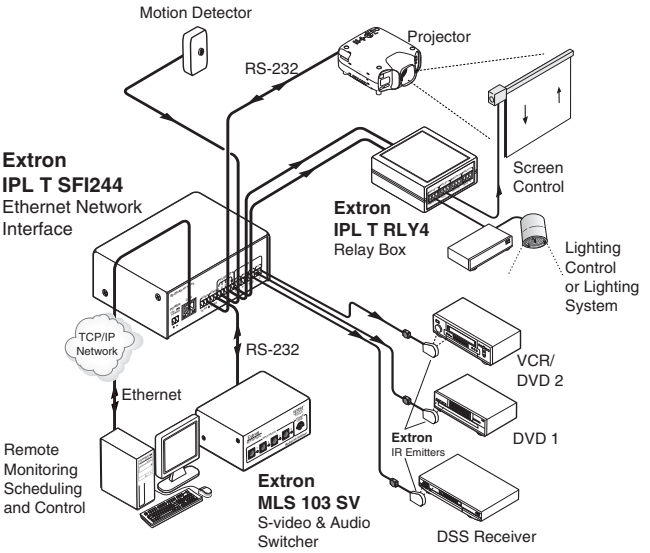
System Security and Loss Prevention
IP Link interfaces are always on and routinely poll their connected devices for status information. If a serially controlled device like a projector or document camera is physically disconnected from the network, the IP Link interface monitoring its status will know immediately. In such an event, the IP Link interface can be configured to send an e-mail message notifying security personnel of the problem.


E-mail Message
To: Security Personnel
Subject: IP Link Alert
ATTENTION
The LCD projector in Room C1212 has been disconnected from the system.

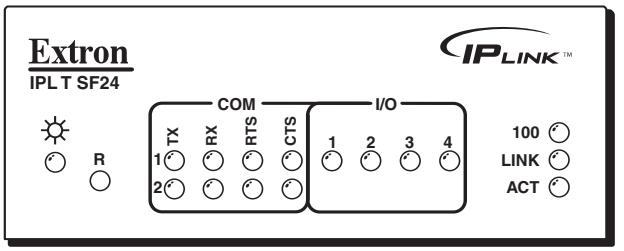
Theft Alert

Application Diagrams

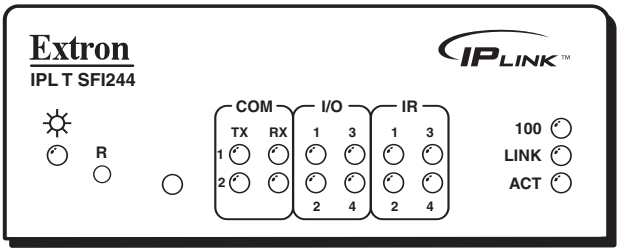




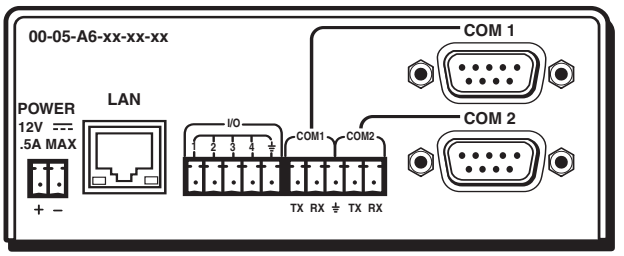
Panel Drawings



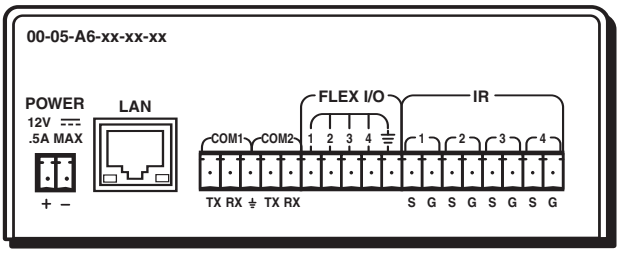
IPL T SF24 (Front)



IPL T SFI244 (Front)



IPL T SF24 (Back)



IPL T SFI244 (Back)

Extron Electronics, USA
1230 South Lewis Street
Anaheim, CA 92805
800.633.9876 714.491.1500
FAX 714.491.1517

Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort, The Netherlands
+800.3987.6673 +31.33.453.4040
FAX +31.33.453.4050

Extron Electronics, Asia
135 Joo Seng Rd. #04-01
PM Industrial Bldg., Singapore 368363
+800.7339.8766 +65.6383.4400
FAX +65.6383.4664

Extron Electronics, Japan
Daisan DMJ Bldg. 6F, 3-9-1 Kudan Minami
Chiyoda-ku, Tokyo 102-0074
Japan
+81.3.3511.7655 FAX +81.3.3511.7656

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